

DECATUR STREET BRIDGE  
Texas Historic Bridges Recording Project II  
Spanning Dry Creek  
Chico  
Wise County  
Texas

HAER No. TX-84

HAER  
TEX  
249-CHICO  
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WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD  
National Park Service  
U.S. Department of the Interior  
1849 C St. NW  
Washington, DC 20240

## INTRODUCTION

When the Federal Aid Highway Act was signed in 1956, shifting development of the nation's interstate system into high gear, McDonald's golden arches conclusively supplanted masonry arches on the American landscape. -Boothby and Roise<sup>1</sup>

Despite the abundance of excellent limestone in Texas and a long history of masonry construction, the Decatur Street Bridge is one of a very small number of active masonry bridges in Texas. Only nine active masonry arch bridges remain unaltered out of a population of about 50,000 bridges on and off the TxDOT system.<sup>2</sup> Boothby and Roise estimate a population of slightly less than 1,000 masonry highway bridges in use nationwide. A rare survivor of a rare type, this four-arch, single-lane bridge is approximately 40' long and crosses Dry Creek at a forty-five-degree skew. The 13' wide road surface is flanked by low, single-stone deep, parapets about 8 inches wide and 12 inches high. Dimensions of the arches vary, but may be as much as 6'-1/2" wide with a 4' spring. At very close range, the arches give a vertical impression -- an impression that might be a function of the dramatic skew. The easternmost arch is noticeably smaller and was partially blocked in an effort to repair a crack in the arch (visible in photographs taken for TxDOT in 1985).<sup>3</sup> Despite this major effort, a steel reinforcing bar still loops incongruously between the arch and the road surface. Mortar joints throughout the bridge show much variation -- probably an indication of numerous, sincere, if less than skilled, repair efforts. Several buried cables and pipes on either side of the bridge have altered hydrology of the streambed and may have contributed to the scouring of the piers in several areas.<sup>4</sup>

The numerous repairs obscure the builder's unusual resolution of the intersection of the skewed arch barrels with the spandrel walls. Early bridge masons in the United States, most notably on the National Road, avoided these difficult issues by crossing the stream at 90 degrees and skewing the approaches. The result was the so-called "S-bridge." Other solutions included laying the stones parallel to the springing, as at Decatur Street; laying the stones at an angle to the springing; and laying the stones at an angle to the springing while changing the height of the

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<sup>1</sup> Thomas E. Boothby and Charlene K. Roise, "An Overview of Masonry Arch Bridges in the USA," in *Arch Bridges: Proceedings of the first International Conference on Arch Bridges held at Bolton, UK on 3-6 September 1995*, ed. Clive Melbourne (London: Thomas Telford, 1995), 12.

<sup>2</sup> Texas Department of Transportation in Cooperation with the Texas Historical Commission, *Texas Historic Bridge Inventory: Survey of Non-Truss Structures* (Austin, Tex.: Texas Department of Transportation, 1999), 16.

<sup>3</sup> Decatur Street Bridge, F000-10-001, Wise County, District 2, bridge photograph files, Environmental Affairs Division, Texas Department of Transportation, Austin, Tex.

<sup>4</sup> These dimensions are very approximate, and are based on Decatur Street Bridge, TxDOT Control Section F000-10-001, Determination of National Register Eligibility files, Environmental Affairs Division, Texas Department of Transportation, Austin, Tex., and the author's informal field measurements.

stones within each course. At Decatur Street, however, the builders did not bevel the ends of their stones flush with the spandrel walls. The resulting sawtooth effect gives the impression that the facade stones have fallen from the bridge. While this is a possibility, the absence of beveled voussoirs, and the limited number of orthogonal stones in the creek bed suggest otherwise.

During the rapid expansion of a North American transportation network, the limited economic resources of early European settlements constrained the development of masonry arch bridges.<sup>5</sup> Eastern Seaboard communities only built masonry bridges after reaching a certain level of prosperity, or under certain political urgency as in the case of the nation's earliest surviving masonry arch bridge, the 1697 Pennypack Creek Bridge in Philadelphia.<sup>6</sup> It was the permanence and strength that made masonry construction the choice of railroad and canal engineers for major crossings. Railroads often had, or found, the resources to build in this expensive and labor-intensive material. Both engineers and clients, however, had interest in finding other materials. Clients were disturbed by the expense and engineers were troubled by the mathematical uncertainties in their knowledge of arch behavior. But it was the search for permanence and the ambitions of the civic authorities that led to the 1887 replacement of a bowstring arch with a substantial masonry bridge in Austin, Texas.<sup>7</sup>

Metal was the material of choice for the vast majority of highway and railroad bridge construction after the Civil War. Urbanism, or more correctly, a reaction to increasing urbanism, was responsible for an exception to the dominance of metal over masonry bridges in the antebellum period. Designers of city and state parks often exploited the rugged textures and nostalgic associations of masonry bridges in their pursuit of a "picturesque" aesthetic. The once high-tech masonry bridge was rendered quaint by metal truss bridges, and ultimately by bridges made with reinforced concrete. This long decline in the status of masonry bridges was halted briefly during the Great Depression. In the 1930s, the labor-intensive nature of masonry construction was a distinct advantage to politicians seeking to put people to work. The revival of the masonry bridge in the context of cheap labor resulted in such monumental structures as the 433'-4" Possum Kingdom Stone Arch Bridge of 1940-42.<sup>8</sup>

History is written by the victors, it is often said; the same is observed, though less frequently, by those who keep records. Neither has been the fate of the Decatur Street Bridge. Once a bustling cotton market served by the Rock Island Railroad, the town of Chico is now home to a crushed-limestone industry in a county experiencing an oil boom. Chico, which

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<sup>5</sup> This paragraph largely based on Boothby and Roise, 11-18.

<sup>6</sup>Historic American Engineering Record (HAER), National Park Service, U.S. Department of the Interior, "Choate Bridge," No. MA-81 and "Pennypack Creek Bridge," HAER, No. PA-465.

<sup>7</sup>"West Sixth Street Bridge," HAER, No. TX-51.

<sup>8</sup>"Possum Kingdom Stone Arch Bridge," HAER No. TX-62 for large format photographs taken in 1996. For a more extensive history see: T. Lindsay Baker, *Building the Lone Star State: An Illustrated Guide to Historic Sites* (College Station: Texas A&M University Press, 1986), 193-95.

means "little," was named after the California home of Col. J. T. Brown. Brown arrived in the area in 1875 and shortly thereafter purchased the forty-five-acre town site from long-time area resident R. C. Mount. In time, the community acquired two banks, two cotton gins, four grocery stores, a coed school, and numerous churches, all centered on the town square. In 1888, Brown built a hotel on Decatur Street, southeast of the square and immediately west of the bridge, on the road east to the county seat at Decatur. Despite its "little" name, the founders of Chico clearly had ambitions for their community – some were to be realized, some not. Chico was not incorporated as a city until 1950.<sup>9</sup>

No known records document the construction of the Decatur Street Bridge. A review of the Wise County *Commissioners' Court Minutes* index for the late nineteenth century clearly shows that most bridge construction funding was for timber. There is only one reference to stonework, a bridge on the Decatur-Bolivar [Denton County] Road, but it is not clear whether the work was for abutments or the bridge itself.<sup>10</sup> It is more likely that Chico's residents became tired of fording Dry Creek and built a bridge using local limestone and labor. Even at one lane wide, a masonry bridge in a county of wooden bridges would have reflected the sense of prosperity and ambitions of the residents of Chico. Indeed, before the construction of a railroad station northwest of the square in the 1890s, and long before the construction of the State Highway 101 bypass immediately east of the bridge, the Dry Creek crossing with its stone arch bridge and the Brown Hotel would have been a grand formal entrance to the city square immediately beyond. As Terry Jordan has shown in his study of Texas log buildings, ordinary and common structures can reveal profound things about their builders.<sup>11</sup>

Built of stone for those who wanted the extraordinary for their community, but who nevertheless did not have the means or the vision to build a bridge sufficiently attractive or sufficiently grand to accommodate the second millennium, the bridge is scheduled for replacement with a four-span concrete arch bridge in 2001.<sup>12</sup>

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<sup>9</sup> Rosalie Gregg, ed., *Wise County History: A Link with the Past*, vol. 1, ([Wichita Falls, Tex.]: Wise County Historical Survey Committee, 1975), 129-33; Vesta Watson, "Our Pioneers," Mts of Dedication Speech, [for National Register of Historic Places Designation], Brown Hotel, 16 May 1972, in City of Chico folder, vertical file, Chico Public Library, Chico, Tex.

<sup>10</sup> Wise County, Texas, *Index to Commissioners' Court Minutes*, vol. 1 (Wise County Courthouse, Decatur, Tex.). In *Commissioners' Court Minutes*, vol. 2: 517, \$327.50 was authorized "for stonework on bridge on Catlett Creek."

<sup>11</sup> Terry G. Jordan, *Texas Log Buildings, A Folk Architecture* (Austin: University of Texas Press, 1978).

<sup>12</sup> Robert Perales, Environmental Affairs, Texas Department of Transportation, Fort Worth, Texas, conversation with the author, 17 Aug. 2000. The more expensive arch design was selected over the standard box culvert, such as the one immediately downstream, as a reminder of the current structure.

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